HACCP

Hazard
Analysis and
Critical
Control
Points

Aim: Defect free foodstuffs
Approach: Prevention

It is obligatory by EU legislation for all post-harvest activities

Formation of HACCP Team

The HACCP is responsible for the design, application and maintenance of the system. Its sections of the operation should be represented in its membership.

Determination of Product Specifications

Product specifications are defined taking into account the intended use of the product. Characteristics which could affect product safety and hygiene are given priority.

Process Analysis

All phases of the production process are analysed, i.e.

- Purchasing and storage of inputs (raw and packaging materials)
- Sorting and/or Processing
- Product realisation and Packaging
- Handling of by-products and waste
- Product storage, transport and distribution.

A flow diagram of the production process is constructed and validated in situ by the HACCP team..

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Hazard Identification

Hazards that my affect product hygiene and safety are identified for each phase of the production process.

Each hazard is evaluated in terms of the probability of its occurrence and the severity of its effects. In addition, preventive actions are specified for each hazard.

Identification of Critical Control Points (CCP)

Critical Control Points (CCPs) are specific stages of the production process where loss of control would give rise to one or more hazards.

The number of CCPs depends on the number and type of raw materials and the complexity of the production process.

The Codex Alimentarius Commission proposes the use of the following decision tree for the determination of CCPs:

Decision Tree for Each Stage where a Hazard has been Identified

1. Is there a way to prevent the specific hazard?

YES

NO → Is control essential for product safety?;

Is control essential for product safety? → YES → Process Modification

NO → Not a CCP → NEXT STAGE

2. Is the particular stage designed specifically for the elimination or minimisation of the hazard?;

NO

YES → CRITICAL CONTROL POINT

3. Can the values of the parameters associated with the hazards exceed critical limits?

YES

NO → Not a CCP → NEXT STAGE

4. Is there a stage later in the process which can eliminate or minimise the particular hazard?

NO → CRITICAL CONTROL POINT

YES → Not a CCP → NEXT STAGE

Determination of CCP Parameters and their Critical Limits

Measurable (organoleptic, physical, chemical or biological) parameters which reflect the presence and intensity of each hazard are determined for each CCP.

Each such parameter is assigned a tolerance level, above which corrective actions must be implemented.

Monitoring System Design

Each CCp is monitored at a specified frequency using a series of observations and measurements, so that any non-conformances be identified before product release and corrective actions implemented.

Observations are organoleptic and provide qualitative results.

Measurements require the use of physical, chemical and microbiological methods and have qualitative and quantitative results.

The selection of observations and measurements depends on the severity of the hazard, the time required for results to be obtained and the cost.

Determination of Corrective Actions

Corrective actions are implemented when the tolerance level is exceeded.

Corrective actions are designed so that the hazard is eliminated or minimised in the shortest possible time with minimum amounts of materials discarded.

Documentation and Records

Efficient implementation and evaluation of a HACCP system requires traceability of materials and actions.

Therefore a system of records is essential. Information recorded includes:

- The observations and measurements and their results.
- Non-conformances and relevant corrective actions.
- Personnel records.
- Production records.

Verification Procedures

Verification procedures include:

- Further measurements and tests, to ensure that the monitoring system works correctly and efficiently.
- Evaluation of recorded information.
- Internal Audits
- Reviews of the operation of the system.
- Evaluation of any complaints.
- Root cause analyses of non-conformances.

Post Harvest, Citrus